

Application No. 10/798,745
Response to Office Action

Customer No. 01933

Listing of Claims:

1. (Currently Amended) A polygon mirror which is bonded to a connection member that connects the polygon mirror to a bearing to support the polygon mirror about an axis of rotation thereof, said polygon mirror comprising:

5 a mirror body which is shaped in as a regular polygon and having includes circumferential surfaces, a top surface and a bottom surface, and which comprises a reflection surface formed on each of the circumferential surface surfaces;

10 a machining reference surface which is provided on one of the top and bottom surfaces, and which is machined to form have a mirror surface and is used as a reference surface for machining the reflection surface on each of the circumferential surfaces; and

15 an assembling reference surface which is provided on one of the top ~~an~~ and bottom surfaces, ~~shaped in~~ and is parallel to the machining reference surface, and which is machined to form ~~a rough~~ have a rougher surface than the machining reference surface; and

20 wherein the assembling reference surface is used as a reference surface for ~~assembling bonding~~ the polygon mirror to the connection member with an adhesive.

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2. (Currently Amended) A polygon mirror of claim 1, wherein a surface roughness Ra of said ~~planished machining~~ assembling reference surface is determined by the formula: ~~(a)~~

$$0.16\mu\text{m} \leq \text{Ra} < 21.8\mu\text{m},$$

5 wherein said surface roughness Ra is an arithmetic mean roughness specified in the JIS B0601 or ISO 468-1982.

$$\cancel{0.16\mu\text{m} \leq \text{Ra} \leq 21.8 \mu\text{m}} \quad \cancel{(a)}$$

3. (Currently Amended) A polygon mirror of claim 1, wherein a surface roughness Ra of said ~~planished machining~~ assembling reference surface is determined by the formula ~~(b)~~

$$0.2\mu\text{m} \leq \text{Ra} \leq 20\mu\text{m},$$

5 wherein said surface roughness Ra is an arithmetic mean roughness specified in the JIS B0601 or ISO 468-1982.

$$\cancel{0.2\mu\text{m} \leq \text{Ra} \leq 20 \mu\text{m}} \quad \cancel{(b)}$$

4. (Currently Amended) A polygon mirror of any one of claims 1-3, wherein ~~at least~~ a circular groove is provided in ~~circular form~~ along ~~either at least one of an inside or and~~ an outside edge of said ~~roughed~~ assembling reference surface.

5. (Currently Amended) A deflecting apparatus comprising:
a base member;

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a polygon mirror ~~having reflection surfaces formed in~~ shaped
as a regular polygon on each circumferential surface thereof; and
5 a bearing rotatably mounted against the base member; and

a flange connection member holding which holds said polygon
mirror and connects the polygon mirror to the bearing, being
rotatably mounted against and which is connected to the bearing
to be rotatably mounted with the bearing about said base member;

10 wherein said polygon mirror has comprises:

a reflection surface formed on each circumferential
surface thereof;

a planished machining reference surface used as a
reference surface for machining when machining said reflection
15 surfaces; as a reference surface for machining, and

a roughed an assembling reference surface, which is
rougher than and parallel to the machining reference surface, and
which is used as a reference surface for assembling said polygon
mirror; as a reference surface for assembly, parallel with said
20 planished machining reference surface for processing reference;

wherein said roughed assembling reference surface is ~~butted~~
abutted against and bonded onto said flange connection member
with an adhesive.

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6. (Currently Amended) A deflecting apparatus of claim 5, wherein ~~said a~~ surface roughness Ra of said ~~planished machining assembling~~ reference surface is determined by the formula: ~~(c)~~

$$0.16\mu\text{m} \leq \text{Ra} \leq 21.8\mu\text{m},$$

5 wherein said surface roughness Ra is an arithmetic mean roughness specified in the JIS B0601 or ISO 468-1982.

~~$$0.16\mu\text{m} \leq \text{Ra} \leq 21.8\mu\text{m}$$~~

7. (Currently Amended) A deflecting apparatus of claim 5, wherein ~~said a~~ surface roughness Ra of said ~~planished machining assembling~~ reference surface is determined by the formula ~~(d)~~

$$0.2\mu\text{m} \leq \text{Ra} \leq 20\mu\text{m},$$

5 wherein said surface roughness Ra is an arithmetic mean roughness specified in the JIS B0601 or ISO 468-1982.

~~$$0.2\mu\text{m} \leq \text{Ra} \leq 20\mu\text{m}$$~~

8. (Currently Amended) A polygon mirror of any one of claims 5-7, wherein ~~at least~~ a circular groove is provided in ~~circular form~~ along ~~either~~ at least one of an inside or and an outside edge of said ~~roughed~~ assembling reference surface.

9. (Currently Amended) An image forming apparatus equipped with ~~an~~ the optical deflecting apparatus of any one of claims 5-7.

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Claims 10-13 (Canceled).

14. (Currently Amended) An image forming apparatus equipped with an the optical deflecting apparatus of claim 8.

15. (New) A polygon mirror of claim 1, wherein the connection member transfers rotation torque to the polygon mirror.

16. (New) A deflecting apparatus of claim 5, wherein the connection member transfers rotation torque to the polygon mirror.